Linda Jacobson (3 Copies)
RCRA Project Manager
US EPA Region VIII
8ENF-T
1595 Wynkoop Street
Denver, Colorado 80202-1129

February 6, 2009

SENT BY CERTIFIED MAIL
RETURN RECEIPT REQUESTED

CONSENT DECREE
CIVIL ACTION NO. CV 98-3-H-CCL
EAST HELENA SITE
WORK PERFORMED IN JANUARY 2009
PROGRESS REPORT #121

Dear Ms. Jacobson:

On May 5, 1998, Asarco and the United States Environmental Protection Agency (EPA) entered into a Consent Decree (Decree) to further the objectives of the Resource Conservation and Recovery Act (RCRA) and the Clean Water Act (CWA). Section XI of the Decree (Reporting: Corrective Action) requires Asarco to submit certified monthly progress reports to EPA which discuss the actions taken by Asarco in achieving compliance with the Decree. The reports are to be submitted to EPA no later than the twentieth (20^{th}) day of the following month. The following describes only those activities that have occurred or are related to projects performed during January 2009 and early February 2009. The historical actions taken by Asarco in achieving compliance with the Decree are contained in previous monthly progress reports.

a. Describe the actions, progress, and status of projects which have been undertaken pursuant to Part VII of the Decree;

On January 12, 2009, EPA, Montana Department of Environmental Quality, Lewis and Clark County, and Asarco personnel participated in a tour of the East Helena facility (and surrounding area) to familiarize Greenfield Environmental Trust Group personnel with RCRA and CERCLA programs that have taken place or are currently taking place.

In early January 2009, Asarco commenced discussions with the Montana Department of Environmental Quality on Asarco's proposed cleaning and demolition project for calendar year 2009. The 2009 work plan objectives will focus on fulfilling all of the remaining obligations contained within the Administrative Order on Consent while addressing interim measure

responsibilities and waste management associated with the cleaning and demolition activities. In a January 22, 2009 telephone call, Asarco shared the generalities of the proposed 2009 work plan with EPA's project manager. On January 23, 2009, a map illustrating the major components of Asarco's proposal was mailed to EPA. On January 23, 2009, Asarco and its consultants met with Josef Warhank (Montana Historical Society) to commence discussions on work plan historic recordation and historic narrative context requirements.

Asarco anticipates delivery of a draft work plan to EPA and the State of Montana in February 2009. Our goal is to address regulatory comments and finalize the work plan no later than March 15, 2009. Shortly thereafter, we will invite prospective contractors to bid on conducting the approved work. Asarco and its contractors must commence the 2009 cleaning and demolition project no later than May 1, 2009 in order to achieve the overall program.

Interim Measures

Per EPA's request, Asarco will assemble a summary report that discusses the work performed under the 2008 Interim Measures Work Plan Addendum, Blast Furnace Flue and Monier Flue Cleaning and Demolition And Demolition Footprint Exposed Areas Soils Sampling (May 2008). Asarco anticipates delivery of the summary report to EPA in February 2009.

On February 3, 2009, Asarco received EPA's January 28, 2009 letter that requires Asarco to submit an addendum to the groundwater interim measures work plan for the installation of additional groundwater monitoring wells. The well placement will further characterize the northwest component of the intermediate aquifer selenium plume. Asarco will prepare the work plan for submittal to EPA no later than March 3, 2009. Asarco expects that the cost to develop and conduct the activities contained in the work plan will be credited against the custodial trust amount.

Corrective Action Management Unit (CAMU)

During January 2009, Hydrometrics personnel continued to monitor and pump the leachate collection system from the CAMU phase 2 cell. Approximately 3,150 gallons of leachate was pumped from the leachate collection system in January 2009. The leak detection sump continues to have zero flow, but will continue to be monitored and pumped, if necessary.

On January 30, 2009, Asarco to submitted to EPA the CAMU Phase 2 Cell, 2008 Construction Report.

RI/FS Long-Term Monitoring Program

On January 21, 2009, Asarco submitted to EPA a spreadsheet of the October/November 2008 sampling event results.

On January 19, 2009, Asarco conducted the monthly sampling of select residential groundwater wells, as prescribed in the RI/FS Long-Term Monitoring Program (February 2008). Copies of the January 2009 residential well notification letters along with the respective laboratory analytical reports have been attached to this monthly progress report.

Paragraph 97 of the Decree requires Asarco to develop and maintain a single cost estimate for the remaining work to be performed under Section VII (Corrective Action at East Helena) with the annual cost estimates being transmitted with the January monthly progress reports. Asarco is committed to budgeting $2 million in calendar year 2009 for work associated with the EPA RCRA Consent Decree. During calendar year 2009, Asarco anticipates performing further work by 1) conducting the historic recordation and reporting for structures impacted by the 2009 cleaning and demolition project, 2) placing interim liners in footprint areas impacted by the 2009 cleaning and demolition work plan, 3) managing disposal of wastes generated during the 2009 cleaning and demolition work in the CAMU phase 2 cell, 4) preparing and implementing interim measure work plans to characterize groundwater plumes, 5) preparing a phase II RFI and Risk Assessment work plan and performing required supplemental monitoring, 6) performing on-going monitoring outlined in the RI/FS long-term monitoring program, slurry wall area monitoring, and O&M program, 7) implementing a contingency pump and treat program (source control), 8) repairing and/or replacing plant site temporary covers, and 9) conducting a corrective measures study. The $2 million budget does not include 2009 calendar year costs associated with the cleaning and demolition activities at the East Helena Plant. Asarco and EPA continue to discuss certain groundwater remediation actions that, when competed, will assist Asarco is better defining the 2009 cost estimates.

A summary of the correspondence transmitted as part of the East Helena Consent Decree in January 2009 is included in Attachment 1.

b. Identify any requirements under the Part VII of the Decree that were not completed in a timely manner, and problems or anticipated problem areas affecting compliance with the Decree;

There were no requirements that were not completed in a timely manner nor were there problems or anticipated problem areas that may affect compliance with the Decree.

c. Describe projects completed during the prior month, as well as activities scheduled for the next month;

In accordance with the 1) 2006 Interim Measures Work Plan Addendum, Final Cleaning, Soil Sampling, Backfilling, and Interim Cap Work Plan and 2) 2006 Interim Measures Work Plan Addendum, Former Acid Plant Sediment Drying Area Slurry Wall, Monitoring, Operation, and Maintenance Work Plan, four areas

in which interim caps have been installed are being inspected on a monthly basis. In December 2008, these monthly inspections were expanded to include areas in which above grade demolition activities were conducted under the 1) 2008 Interim Measures Work Plan and 2) 2008 Cleaning and Demolition Project Work Plan, with the most recent inspections occurring on January 5, 2009.

CAMU Landfill - In accordance with the July 2000 CAMU Design Analysis Report (Operation and Maintenance Plan), the CAMU is being inspected monthly with the last inspection occurring on January 2, 2009. The inspections of the CAMU Phase 2 cell temporary cover are being conducted on a weekly schedule. These monthly and weekly inspections documented that the CAMU Phase 1 and Phase 2 cell are operating as designed.

The field work scheduled for February 2009 includes performing the quarterly groundwater monitoring, as prescribed in the updated monitoring program. The quarterly monitoring program includes the sampling of 67 groundwater wells for analysis of those parameters listed in Appendix B. Asarco has commenced development of the 2009 cleaning and demolition work plan, with an anticipated delivery to the Agency and Department of Environmental Quality in February 2009. Asarco anticipates delivery of the summary Interim Measures Addendum Report to EPA in February 2009. Asarco has commenced development of an addendum to the interim measures work plan for the installation of additional groundwater monitoring wells, with an anticipated delivery to EPA no later than March 3, 2009. The wells placement will further characterize the northwest component of the intermediate selenium plume.

d. Describe and estimate the percentage of studies completed;

The Pump and Treat Pilot Scale Testing for Source Area Reduction of Groundwater Contamination is approximately 100% complete.

The jar testing (Phase I) of the East Helena PRB Materials Testing Program is 100% complete.

The slurry wall construction in the former acid plant sediment drying area is 100% complete. On July 24, 2008, Asarco submitted to EPA the Addendum to Interim Measures Work Plan, Former Acid Plan Sediment Drying Wall, Monitoring, Operations, and Maintenance Report, Asarco East Helena Facility.

The interim capping project for the former acid plant sediment drying area, dross area, sinter plant area, gas cleaning section of the acid plant, and thaw house is 100% complete.

The revised January 2008 CAMU Phase 2 Cell Design Analyses is 100% complete, the CAMU Phase 2 Cell financial assurance is fully funded, and construction and 2008 waste placement of the CAMU Phase 2 cell is 100%

complete.

The slurry wall construction in the former speiss-dross plant area is 100% complete. On September 18, 2008, Asarco submitted to EPA the Addendum to Interim Measures Work Plan, Speiss-Dross Area Slurry Wall, Monitoring, Operations, and Maintenance Report, Asarco East Helena Facility.

e. Describe and summarize all findings to date;

The details of past findings through December 2008 are described and summarized in previous monthly progress reports.

f. Describe actions being taken to address problems;

There were no other actions required to address problems associated with the Decree.

g. Identify changes in key personnel during the period;

There were no changes in key personnel during the period. Asarco continues to use the services of Hydrometrics Incorporated to perform the various activities required under the Consent Decree.

h. Include copies of the results of sampling and tests conducted and other data generated pursuant to work performed under Part VII of the Decree since the last Progress Report. Asarco may submit data that has been validated and confirmed by Asarco to supplement any prior submitted data. Updated validated and confirmed data shall be included with the RFI Report, if not delivered before;

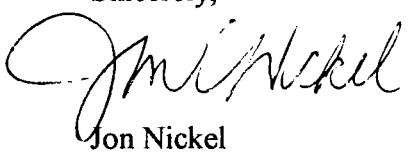
One validation package entitled "*Validation Summary, Asarco East Helena Post RI/FS Long-Term Monitoring Program, East Helena Residential Groundwater, Inorganic Analyses, January 2009* is attached to this monthly progress report.

i. Describe the status of financial assurance mechanisms, including whether any changes have occurred, or are expected to occur which might affect them, and the status of efforts to bring such mechanisms back into compliance with the requirements of this Decree.

ASARCO filed a voluntary petition for relief under chapter 11 of Title 11 of the United States Bankruptcy Code in the Southern District of Texas on August 9, 2005. ASARCO hopes to use its chapter 11 bankruptcy proceeding to improve its financial position to the point where it can successfully reorganize and emerge from bankruptcy. ASARCO further hopes that at that time it will be in a position to make the required financial assurance demonstration. Asarco has established

the necessary CAMU Phase 2 Cell financial assurance and has provided EPA with the complete executed original of the CAMU Trust Fund Agreement.

Sincerely,



Jon Nickel

CERTIFICATION
PURSUANT TO U.S. v ASARCO INCORPORATED
(CV-98-3-H-CCL, USDC, D. Montana)

I certify under penalty of law that this document, January 2009 Progress Report and all attachments, were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.

Signature _____
Name: Thomas L. Aldrich
Title: Vice President Environmental Affairs
Date: February 6, 2009

CONSENT DECREE
EAST HELENA SITE
JANUARY 2009 PROGRESS REPORT
SUMMARY OF CORRESPONDENCE
ATTACHMENT 1

DATE OF TRANSMITTAL	CORRESPONDENCE SENT FROM	CORRESPONDENCE SENT TO	SUBJECT	RESPONSE
January 23, 2009	Jon Nickel	Linda Jacobson	Map of Proposed 2009 Cleaning and Demolition Project	Review and Comments Requested
January 30, 2009	Jon Nickel	Linda Jacobson	CAMU Phase 2 Cell, 2008 Construction Report	No Formal Response Required
January 21, 2009	Jon Nickel	Linda Jacobson	Spreadsheet of the October/November 2008 Sampling Event Results	No Formal Response Required
Attached to This Monthly Progress Report	Jon Nickel	Linda Jacobson	Validation Summary, Asarco East Helena Post RI/FS Long-Term Monitoring Program, East Helena Residential Groundwater, Inorganic Analyses, January 2009 Sample Event	No Formal Response Required

ASARCO

January 29, 2009

Pat Foley
203 Gail Street
P. O. Box 1551
East Helena, Montana 59635

Dear Mr. Foley:

Enclosed are the analytical results for the water samples that were collected from the 203 Gail Street ground water well on January 19, 2009. All the results are reported in milligrams per liter, unless otherwise noted. The physical parameters are reported in the units noted on the attached laboratory analytical report. "ND" indicates that the parameter was not detected at the reporting limit.

The water quality of your well is good with near neutral pH and low levels of total dissolved solids and metals. The tested water quality parameters of the well for the constituents sampled are better than the Montana Human Health Standards and Federal Maximum Contaminant Level (MCL)/Action Levels. These recent water quality results are consistent with previous monitoring data from your site and do not indicate significant changes from historical baseline data.

If you have any questions about the enclosed water quality results, please feel free to contact me at 227-4529.

Sincerely,

Jon Nickel

Enclosure

Cc: Tom Aldrich

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHP-0109-300
Project: RI/FS Long Term Residental Monitoring January 2009
Matrix: Groundwater

Foley Residence
203 Gail Street

Lab ID: H09010129-001
Collection Date: 01/19/09 11:00
DateReceived: 01/19/09
Report Date: 01/28/09

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.1	s.u.		0.1		A4500-H B	01/20/09 13:43 / hm			PH_090120A : 4		090120A-PH-W
Conductivity	300	umhos/cm		1		A2510 B	01/22/09 12:25 / hm			COND_090122A : 2		090122A-COND-PROBE W
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	01/20/09 15:03 / hm			SOLIDS_090120A : 3		090120A-SLDS-TSS-W
Solids, Total Dissolved TDS @ 180 C	199	mg/L		10		A2540 C	01/19/09 16:12 / hm			SOLIDS_090119A : 17		090119A-SLDS-TDS-W
INORGANICS												
Alkalinity, Total as CaCO3	78	mg/L		1		A2320 B	01/22/09 16:16 / hm			TITTR_090122A : 4		090122A-ALK-W
Bicarbonate as HCO3	95	mg/L		1		A2320 B	01/22/09 16:16 / hm			TITTR_090122A : 4		090122A-ALK-W
Chloride	5	mg/L		1		E300.0	01/22/09 19:34 / hm			IC101-H_090122A : 21		R51551
Sulfate	52	mg/L		1		E300.0	01/22/09 19:34 / hm			IC101-H_090122A : 21		R51551
METALS, DISSOLVED												
Arsenic	ND	mg/L		0.002		E200.8	01/24/09 12:13 / eli-b			SUB-B123895 : 15		B_R123895
Cadmium	ND	mg/L		0.001		E200.8	01/24/09 12:13 / eli-b			SUB-B123895 : 15		B_R123895
Calcium	30	mg/L		1		E200.7	01/21/09 15:24 / eli-b			SUB-B123777 : 7		B_R123777
Copper	0.018	mg/L		0.004		E200.8	01/24/09 12:13 / eli-b			SUB-B123895 : 15		B_R123895
Iron	ND	mg/L		0.02		E200.7	01/21/09 15:24 / eli-b			SUB-B123777 : 7		B_R123777
Lead	ND	mg/L		0.005		E200.8	01/24/09 12:13 / eli-b			SUB-B123895 : 15		B_R123895
Magnesium	6	mg/L		1		E200.7	01/21/09 15:24 / eli-b			SUB-B123777 : 7		B_R123777
Manganese	ND	mg/L		0.01		E200.7	01/21/09 15:24 / eli-b			SUB-B123777 : 7		B_R123777
Potassium	3	mg/L		1		E200.7	01/21/09 15:24 / eli-b			SUB-B123777 : 7		B_R123777
Selenium	ND	mg/L		0.005		E200.8	01/24/09 12:13 / eli-b			SUB-B123895 : 15		B_R123895
Sodium	13	mg/L		1		E200.7	01/21/09 15:24 / eli-b			SUB-B123777 : 7		B_R123777
Zinc	ND	mg/L		0.02		E200.8	01/24/09 12:13 / eli-b			SUB-B123895 : 15		B_R123895

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ASARCO

January 29, 2009

David Jensen
P. O. Box 1021
401 Gail Street
East Helena, Montana 59635

Dear Mr. Jensen:

Enclosed are the analytical results for the water samples (both original and duplicate) that were collected from your ground water well on January 19, 2009. All the results are reported in milligrams per liter, unless otherwise noted. The physical parameters are reported in the units noted on the attached laboratory analytical report. "ND" indicates that the parameter was not detected at the reporting limit.

The water quality of your well is good with near neutral pH and low levels of total dissolved solids and metals. The tested water quality parameters of the well for the constituents sampled are better than the Montana Human Health Standards and Federal Maximum Concentration Limits (MCL)/Action Levels. These recent water quality results are consistent with previous monitoring data from your site and do not indicate significant changes from historical baseline data.

If you have any questions about the enclosed water quality results, please feel free to contact me at 227-4529.

Sincerely,

Jon Nickel

Enclosure

Cc: Tom Aldrich

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHP-0109-301
Project: RI/FS Long Term Residental Monitoring January 2009 Jensen Residence (Original)
Matrix: Groundwater 401 Gail Street

Lab ID: H09010129-002
Collection Date: 01/19/09 11:30
DateReceived: 01/19/09
Report Date: 01/28/09

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.2	s.u.		0.1		A4500-H B	01/20/09 13:47 / hm			PH_090120A	5	090120A-PH-W
Conductivity	783	umhos/cm		1		A2510 B	01/22/09 12:27 / hm			COND_090122A	4	090122A-COND-PROBE W
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	01/20/09 15:03 / hm			SOLIDS_090120A	4	090120A-SLDS-TSS-W
Solids, Total Dissolved TDS @ 180 C	555	mg/L		10		A2540 C	01/19/09 16:12 / hm			SOLIDS_090119A	18	090119A-SLDS-TDS-W
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		1		A2320 B	01/22/09 16:26 / hm			TITTR_090122A	5	090122A-ALK-W
Bicarbonate as HCO3	150	mg/L		1		A2320 B	01/22/09 16:26 / hm			TITTR_090122A	5	090122A-ALK-W
Chloride	27	mg/L		1		E300.0	01/22/09 19:54 / hm			IC101-H_090122A	22	R51551
Sulfate	230	mg/L		1		E300.0	01/22/09 19:54 / hm			IC101-H_090122A	22	R51551
METALS, DISSOLVED												
Arsenic	0.003	mg/L		0.002		E200.8	01/24/09 13:37 / eli-b			SUB-B123895	16	B_R123895
Cadmium	ND	mg/L		0.001		E200.8	01/24/09 13:37 / eli-b			SUB-B123895	16	B_R123895
Calcium	92	mg/L		1		E200.7	01/21/09 15:35 / eli-b			SUB-B123777	8	B_R123777
Copper	0.004	mg/L		0.004		E200.8	01/24/09 13:37 / eli-b			SUB-B123895	16	B_R123895
Iron	0.05	mg/L		0.02		E200.7	01/21/09 15:35 / eli-b			SUB-B123777	8	B_R123777
Lead	ND	mg/L		0.005		E200.8	01/24/09 13:37 / eli-b			SUB-B123895	16	B_R123895
Magnesium	20	mg/L		1		E200.7	01/21/09 15:35 / eli-b			SUB-B123777	8	B_R123777
Manganese	0.02	mg/L		0.01		E200.7	01/21/09 15:35 / eli-b			SUB-B123777	8	B_R123777
Potassium	6	mg/L		1		E200.7	01/21/09 15:35 / eli-b			SUB-B123777	8	B_R123777
Selenium	0.022	mg/L		0.005		E200.8	01/24/09 13:37 / eli-b			SUB-B123895	16	B_R123895
Sodium	25	mg/L		1		E200.7	01/21/09 15:35 / eli-b			SUB-B123777	8	B_R123777
Zinc	0.05	mg/L		0.02		E200.8	01/24/09 13:37 / eli-b			SUB-B123895	16	B_R123895

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHP-0109-302
Project: RI/FS Long Term Residental Monitoring January 2009 Jensen Residence (Duplicate)
Matrix: Groundwater 401 Gail Street

Lab ID: H09010129-003
Collection Date: 01/19/09 11:45
DateReceived: 01/19/09
Report Date: 01/28/09

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.2	s.u.		0.1		A4500-H B	01/20/09 13:48 / hm			PH_090120A : 7		090120A-PH-W
Conductivity	785	umhos/cm		1		A2510 B	01/22/09 12:28 / hm			COND_090122A : 5		090122A-COND-PROBE W
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	01/20/09 15:04 / hm			SOLIDS_090120A : 5		090120A-SLDS-TSS-W
Solids, Total Dissolved TDS @ 180 C	523	mg/L		10		A2540 C	01/19/09 16:13 / hm			SOLIDS_090119A : 19		090119A-SLDS-TDS-W
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		1		A2320 B	01/22/09 16:49 / hm			TITTR_090122A : 8		090122A-ALK-W
Bicarbonate as HCO3	150	mg/L		1		A2320 B	01/22/09 16:49 / hm			TITTR_090122A : 8		090122A-ALK-W
Chloride	27	mg/L		1		E300.0	01/22/09 20:13 / hm			IC101-H_090122A : 23		R51551
Sulfate	230	mg/L		1		E300.0	01/22/09 20:13 / hm			IC101-H_090122A : 23		R51551
METALS, DISSOLVED												
Arsenic	0.002	mg/L		0.002		E200.8	01/24/09 14:16 / eli-b			SUB-B123895 : 17		B_R123895
Cadmium	ND	mg/L		0.001		E200.8	01/24/09 14:16 / eli-b			SUB-B123895 : 17		B_R123895
Calcium	93	mg/L		1		E200.7	01/21/09 15:43 / eli-b			SUB-B123777 : 9		B_R123777
Copper	ND	mg/L		0.004		E200.8	01/24/09 14:16 / eli-b			SUB-B123895 : 17		B_R123895
Iron	0.05	mg/L		0.02		E200.7	01/21/09 15:43 / eli-b			SUB-B123777 : 9		B_R123777
Lead	ND	mg/L		0.005		E200.8	01/24/09 14:16 / eli-b			SUB-B123895 : 17		B_R123895
Magnesium	20	mg/L		1		E200.7	01/21/09 15:43 / eli-b			SUB-B123777 : 9		B_R123777
Manganese	0.02	mg/L		0.01		E200.7	01/21/09 15:43 / eli-b			SUB-B123777 : 9		B_R123777
Potassium	6	mg/L		1		E200.7	01/21/09 15:43 / eli-b			SUB-B123777 : 9		B_R123777
Selenium	0.018	mg/L		0.005		E200.8	01/24/09 14:16 / eli-b			SUB-B123895 : 17		B_R123895
Sodium	25	mg/L		1		E200.7	01/21/09 15:43 / eli-b			SUB-B123777 : 9		B_R123777
Zinc	0.05	mg/L		0.02		E200.8	01/24/09 14:16 / eli-b			SUB-B123895 : 17		B_R123895

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

VALIDATION SUMMARY
ASARCO EAST HELENA POST RI/FS LONG-TERM MONITORING PROGRAM
EAST HELENA RESIDENTIAL GROUNDWATER INORGANIC ANALYSES
JANUARY 2009 SAMPLE EVENT
(ENERGY LABORATORY WORK ORDER NO. H09010129)

Prepared for:
Mr. Jon Nickel
Asarco LLC
PO Box 1230
East Helena, MT 59635

Prepared by:
Linda L. Tangen
6900 Cherry Blossom Lane
Albuquerque, NM 87111

February 2009

TABLE OF CONTENTS

LIST OF APPENDICES

GLOSSARY OF TERMS

CLP..... Contract Laboratory Program

COC..... Chain of Custody

CRDL..... Contract Required Detection Limit

DI..... Deionized Water

DIS..... Dissolved

DQO..... Data Quality Objective

ELI-Hel..... Energy Laboratories, Inc., Helena, Montana

EPA..... U.S. Environmental Protection Agency

ICV..... Initial Calibration Verification

IDL..... Instrument Detection Limit

LCS..... Laboratory Control Sample

LFB..... Laboratory Fortified Blank

MS..... Matrix Spike

NA..... Not Applicable

PDLG..... Project Detection Limit Goal

QC..... Quality Control

RI/FS..... Remedial Investigation/Feasibility Study

RPD..... Relative Percent Difference

SC..... Specific Conductivity

TDS..... Total Dissolved Solids

SUMMARY

East Helena private well water (groundwater) samples were collected January 19, 2009 for the ASARCO East Helena Facility Post RI/FS Long-Term Monitoring sample event. Inorganic constituents for these samples were validated using U.S. Environmental Protection Agency (EPA) guidelines for data validation (EPA 2002) and the project work plan (ASARCO 2002 and 2007). Samples were analyzed by Energy Laboratories, Inc. (ELI-Hel) in Helena, Montana, under work order H08120092.

The validated database is located in Appendix 2. Field notes, chain of custody forms, and laboratory reports are located in Appendices 3, 4, and 5, respectively.

Data quality objectives for this project are as follows:

- **Precision** is determined by field and laboratory duplicate sample results that are within control limits. The completeness objective for precision is 90% of the duplicate sample results within control limits. **This objective was met as 100% of the field and laboratory duplicate results were within control limits.**

- **Accuracy** is determined by laboratory control sample (LCS) and matrix spike (MS) sample results that are within control limits. The completeness objective for accuracy is 90% of the LCS and MS sample results within control limits. **This objective was met as 100% of the LCS results and 100% of the MS results were within control limits.**

  ***Note:** Due to the lack of LCSs for dissolved metals, fortified laboratory blanks were used to assess the accuracy for these analytes. In several cases, samples used for matrix spikes for were from unknown sources and therefore, could not be used to evaluate the accuracy of this sampling event's data. This is explained further in the following report.

- **Completeness** is calculated by the number of valid (not rejected) data per number of planned data, expressed as a percentage. The completeness goal for this project was 90%. **This goal was met as 100% of the planned data were analyzed and deemed valid.**

Conclusion

The data collected in January 2009 for the ASARCO East Helena Post RI/FS Long Term Monitoring Program are deemed acceptable and can be used for the purposes they were intended. Of the measured results, **100% can be used without qualification**.

Data Validation Report by: Linda L. Tangen

Client Review: Jon Nickel

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to analyses for four groundwater and quality control samples collected on January 19, 2009 for the ASARCO East Helena Post RI/FS Long-Term Monitoring Program (ASARCO 2002 and 2007). Samples were analyzed by Energy Laboratories in Helena, Montana (ELI-Hel) under work order H09010129. One field blank and one field duplicate samples were included with these samples.

- Validation procedures used are generally consistent with:
  - _X_ EPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganics Data Review (EPA 2002)
  - _X_ Work Plan – Interim Measures Work Plan Addendum (ASARCO 2002)
  - _X_ Post RI/FS Long-Term Monitoring Program (ASARCO 2007)
  - ____ Other

- Overall level of validation:
  - ____ CLP
  - _X_ Standard – Field and laboratory quality control (QC) samples are reviewed; and samples associated with QC violations are flagged.
  - ____ Visual

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001), and/or the project contract.
  - _X_ Yes
  - ____ No

- All documentation of field procedures was provided as required.
  - _X_ Yes
  - ____ No

- Data entry for documents was accurate and complete.
  - ____ Yes
  - _X_ No – see notes

  Notes: The laboratory entered sample codes as EHP-0109 instead of EHR-0109. The correct sample code was entered into the validated database.

3. FIELD PROCEDURES

- Samples were collected from all project-required sites.

  _X_ Yes - see notes
  ___ No

  Notes: All site owners were contacted according to the project requirements, however, a sample was not collected at 109 Gail because the well was winterized.

- Field parameters were measured in accordance with the project work plan.

  _X_ Yes
  ___ No

- Field instruments were calibrated daily and before measurements were collected.

  _X_ Yes
  ___ No

- Chains of Custodies (COCs) were properly filled out and signed by the field personnel.

  _X_ Yes
  ___ No

- Data entry into field books, on COCs, and on sample labels were accurate and complete.

  _X_ Yes
  ___ No

4. FIELD BLANKS

Blanks: Please note that the highest blank value associated with any particular analyte is the blank value used for the flagging process.

Deionized water (DI), trip, rinsate, or any other field blanks have been carried out at the proper frequency (one rinsate blank and one DI blank per event).

_X_ Yes
___ No

Reported results on the field blanks were less than the Project Detection Limit Goals (PDLGs) or reporting limit.

___ Yes
_X_ No – see notes

Notes: Samples associated with blank detections, and with detected results less than five times the blank value are normally flagged **"UJ"** to indicate a possible positive bias. However, for this sampling event, all of the results associated with field blank detections were greater than five times the blank value and therefore, no data were qualified. On the following page is a summary of the field blank detections.

Field Blank Detections

Blank Type	Sample Code	Sample Date	Parameter	PDLG (mg/L)	Result (mg/L)	5 X Result (mg/L)	Flags
Field Blank	EHR-0109-303	1/19/09	Bicarbonate	1	2	10	0*
			Total Alkalinity	1	2	10	0*

***Notes:** Associated results were greater than five times the blank value.

5. FIELD DUPLICATES

Field duplicates have been collected at the proper frequency (one field duplicate per event).

_X_ Yes
___ No

Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 20% or less). If the sample or duplicate result is less or equal to five times the PDLG, the RPD criteria are not used. In these cases, the difference between the sample and the duplicate results must be within ± the PDLG.

_X_ Yes
___ No

6. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  - _X_ CLP-Statement of Work (EPA 2001)
  - ___ SW-846 (EPA 1986)
  - _X_ Methods for Chemical Analysis of Water and Wastes (EPA 1983)

- **Holding times met**
  - _X_ Yes
  - ___ No

- **Consistency with project requirements**

  Analyses were carried out as required by the project work plan (ASARCO 2002 and 2007).

  _X_ Yes
  ___ No

  Project specified methods were used.

  _X_ Yes
  ___ No

7. DETECTION LIMITS

- Reporting detection limits met PDLGs.

  _X_ Yes
  ___ No

8. LABORATORY BLANKS

Please note that the highest blank value associated with any particular analyte is the blank value used for the flagging process.

- Method blanks were prepared and analyzed at the required frequency (one per batch or one per 20 samples, whichever is greater.

  _X_ Yes
  ___ No

- All the analytes in the blank were less than the PDLG.

  _X_ Yes
  ___ No

9. LABORATORY MATRIX SPIKES

- A Matrix Spike (MS) sample (pre-digestion) was analyzed at the proper frequency (one per batch and/or matrix).

  ___ Yes
  _X_ No – see notes

  Notes: Samples from unknown sources were used as the MS for chloride, sulfate, dissolved arsenic, cadmium, copper, lead, selenium, and zinc. Therefore, inter-parameter interferences could not be evaluated for these analyses. The accuracy was measured by laboratory control sample recoveries.

- MS recoveries were within the required control limits (75-125%).

  _X_ Yes
  ___ No

10. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per batch or one per 20 samples, whichever is greater).

  _X_ Yes
  ___ No

- RPDs were within the required control limits (RPD of 20% or less). If the sample or duplicate result is less or equal to five times the PDLG, the RPD criteria are not used. In these cases, the difference between the sample and the duplicate results must be within ± the PDLG.

  _X_ Yes
  ___ No

11. LABORATORY CONTROL STANDARDS (LCS)

Laboratory Fortified Blanks (LFBs) were used in lieu of LCS' for metal analyses. This is acceptable for the purpose of the project.

- The reference material used for the LCS or LFB was of the correct matrix.

  _X_ Yes
  ___ No

- LCS' or LFBs were prepared and analyzed at the proper frequency (one per batch or one per 20 samples, whichever is greater).

  _X_ Yes
  ___ No

- LCS recoveries were within the required control limits (80-120% or certified range).

  _X_ Yes
  ___ No

12. INTERPARAMETER COMPARISON

_X_ Lab pH vs. Field pH
_X_ Lab Specific Conductivity (SC) vs. Field SC
_X_ Total Dissolved Solids (TDS) vs. Field SC

Lab pH vs. Field pH: Field and lab pH pairs were compared using laboratory duplicate criteria (refer to section 10). These comparisons were less than or equal to 9.9 RPD and therefore acceptable for the purposes of the project.

Lab SC vs. Field SC: Field and lab SC pairs were compared using laboratory duplicate criteria (refer to section 10). These comparisons were less than or equal to 37.6 RPD. Following is a summary of the sites with field and lab SC pairs greater than 20 RPD. Action was not taken on these data.

Site	Sample Code	Sample Date	Field SC (umohs/cm)	Lab SC (umohs/cm)	RPD	Action
203 Gail	EHR-0109-300	1/19/2009	205	300	37.6	None - Values in line with historical data.
401 Gail	EHR-0109-301	1/19/2009	547	783	35.5	None - Values in line with historical data.

TDS vs. Field SC: The ratio of TDS to field SC results should lie between 0.55 and 0.75. This ratio is intended to be a check on the accuracy of the TDS and lab SC measurements. In natural waters with high sulfate, the ratio may be much higher and the ratio is less accurate in dilute waters. TDS/SC ratios for this sampling event were from 0.66 to 0.71, which were in line with historical data.

13. HISTORICAL COMPARISON SUMMARY

Data for this sampling event were compared with sampling events from the previous five years (since January 2004). For this sampling event, the dissolved oxygen concentration was historically high for site 203 Gail. The Historical Comparison Summary of this measurement is located in Appendix 1, Table 1.

14. DATA QUALITY OBJECTIVES (DQOS)

- The data quality goal was met for precision (90% of the field and laboratory duplicates were within control limits).

  _X_ Yes –see the following table

  ____ No

Precision Objectives

QC Type	Total Results	# of Results Out of Control Limits	# of Results Within Control Limits	% Within Control Limits
Field Duplicates	20	0	20	100.0%
Lab Duplicates	31	0	31	100.0%
Overall	**51**	**0**	**51**	**100.0%**

- The data quality goal was met for accuracy (90% of the LCS and matrix spike results were within control limits).

  _X_ Yes – see the following table

  ____ No

Accuracy Objectives

QC Type	Total Results	# of Results Out of Control Limits	# of Results Within Control Limits	% Within Control Limits
LCS' and LFBs	21	0	21	100.0%
Matrix Spikes	18	0	18	100.0%
Overall	**39**	**0**	**39**	**100.0%**

- DQO target for completeness was met (the number of valid results divided by the number of possible results is 90% or above).

  _X_ Yes – see the table on the following page

  ____ No

Completeness

# of Planned Measurements	Actual # of Measurements	# of Rejected Measurements	# of Valid Measurements	Completeness
88	88	0	88	100.0%

- Samples were qualified for QC exceedances and deficiencies.
  ____ Yes
  _X_ No – see the following table

Qualification of Samples

# of Measurements	# of Qualified Measurements	# Not Qualified	% Not Qualified
88	0	88	100.0%

15. CONCLUSION

The data collected in January 2009 for the ASARCO East Helena Post RI/FS Long Term Monitoring Program are deemed acceptable and can be used for the purposes they were intended.

Data Validation Report by: Linda L. Tangen

Client Review by: Jon Nickel

REFERENCES

ASARCO 2002. *Interim Measures Work Plan Addendum, East Helena Facility.* ASARCO Consulting Inc. Revised May.

ASARCO 2007. *Post RI/FS Long-Term Monitoring Program.* ASARCO LLC. April.

EPA 1983. *Methods for Chemical Analysis of Water and Wastes.* United States Environmental Protection Agency. March.

EPA 1986. *Test Method for Evaluating Solid Waste: Physical/Chemical Methods 3rd Ed. 4 Vols.* United States Environmental Protection Agency. November.

EPA 2001. *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis.* United States Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.* United States Environmental Protection Agency. July.

APPENDIX 1

TABLES

Table 1. Historical Comparison Summary~

Asarco Private Well Sampling Event
January 2009

~This table lists the results that, when subtracted from the historical mean, the difference is greater than three times the historical standard devation; and/or where this sampling event's data has the highest or lowest historical concentration.

Station	This Sampling Event's Data		Historical Data					Comparison To Historical Data		
Parameter	Sample Date	Value	# of Data Pts	Min	Max	Mean	Std Dev	# of Std Dev*	High or Low	Elev DL**
All units are in ppm unless noted otherwise.										
203 Gail	**1/19/2009**	**EHR-0109-300**								
Oxygen (O) (DIS) (Fld)		19.37	30	3.72	13.49	8.3383	2.5089	4.4	Highest	

Notes:

* # of Std Dev (from historical mean) = The difference between the sample's value and historical mean, divided by the historical standard deviation.

**Elev DL = An elevated reporting limit was used for the sample's value. The program used to generate this report must use the reporting limit value to calculate the statistics for this sampling event. The reader must be aware that the true value may be less than the elevated reporting limit and therefore, the difference between the true value and the historical mean may not be greater than three times the standard deviation; and/or the sample's true value may not be the highest historical concentration.,

APPENDIX 2

DATABASE

ANALYSES SUMMARY REPORT
Asarco East Helena Private Wells - January 2009

Database: ASARCO, East Helena Plant
Table of Contents by Station Type

TOT: Total; DIS: Dissolved; TRC: Total Recoverable

Run Time: 2/3/2009 11:23:50 AM

C:\EnviroDataDB\Databases\V5_B_DB\EastHelena.mdb

ANALYSES SUMMARY REPORT
Asarco East Helena Private Wells - January 2009

Database: ASARCO, East Helena Plant
Table of Contents By Lab Sample ID

TOT: Total; DIS: Dissolved; TRC: Total Recoverable

Run Time: 2/3/2009 11:23:50 AM

C:\EnviroDataDB\Databases\V5_B_DB\EastHelena.mdb

ANALYSES SUMMARY REPORT
Asarco East Helena Private Wells - January 2009

Database: ASARCO, East Helena Plant
Table of Contents by Sample ID

TOT: Total; DIS: Dissolved; TRC: Total Recoverable

Run Time: 2/3/2009 11:23:50 AM

C:\EnviroDataDB\Databases\V5_B_DB\EastHelena.mdb

ANALYSES SUMMARY REPORT
Asarco East Helena Private Wells - January 2009
Database: ASARCO, East Helena Plant

Sample Matrix	STATION	203Gail	401Gail	401Gail	FieldBlank
Water	SAMPLE DATE	1/19/2009	1/19/2009	1/19/2009	1/19/2009
	SAMPLE TIME	11:00	11:30	11:45	12:30
	LAB	ELI	ELI	ELI	ELI
	LAB NUMBER	H09010129-001	H09010129-002	H09010129-003	H09010129-004
	SAMPLE NUMBER	EHR-0109-300	EHR-0109-301	EHR-0109-302	EHR-0109-303
	TYPE	Domestic Wells	Domestic Wells	Domestic Wells	Field QC
	GROUP	Private Wells	Private Wells	Private Wells	Private Wells
	DESCRIPTION				
	REMARKS			Field Duplicate	Blank
Common Ions (mg/L): ppm unless noted					
	Bicarbonate (HCO3)	95	150	150	2
	Calcium (Ca) (DIS)	30	92	93	<1
	Chloride (Cl)	5	27	27	<1
	Magnesium (Mg) (DIS)	6	20	20	<1
	Potassium (K) (DIS)	3	6	6	<1
	Sodium (Na) (DIS)	13	25	25	<1
	Sulfate (SO4)	52	230	230	<1
	Total Alkalinity As CACO3	78	120	120	2
Metals (mg/L): ppm unless noted					
	Arsenic (As) (DIS)	<0.002	0.003	0.002	<0.002
	Cadmium (Cd) (DIS)	<0.001	<0.001	<0.001	<0.001
	Copper (Cu) (DIS)	0.018	0.004	<0.004	<0.004
	Iron (Fe) (DIS)	<0.02	0.05	0.05	<0.02
	Lead (Pb) (DIS)	<0.005	<0.005	<0.005	<0.005
	Manganese (Mn) (DIS)	<0.01	0.02	0.02	<0.01
	Selenium (Se) (DIS)	<0.005	0.022	0.018	<0.005
	Zinc (Zn) (DIS)	<0.02	0.05	0.05	<0.02
Physical/Fld-Lab: ppm unless noted					
	Oxygen (O) (DIS) (Fld)	19.37	11.02		
	pH	7.1	7.2	7.2	5.5
	pH (Fld)	6.43	6.99		
	SC (umhos/cm at 25 C) (Fld)	205	547		
	SC (umhos/cm at 25 C)	300	783	785	2
	Total Suspended Solids	<10	<10	<10	<10
	TDS (Measured at 180 C)	199	555	523	<10
	Water Temperature (C) (Fld)	11.7	11.4		

TOT: Total; DIS: Dissolved; TRC: Total Recoverable

NOTE: Table 1 lists data validation flagging descriptions.

Run Time: 2/3/2009 11:23:50 AM

C:\EnviroDataDB\Databases\V5_B_DB\EastHelena.mdb

APPENDIX 3

FIELD NOTES

JANUARY 19, 2007
MONTHLY R/I'S LONG-TERM
RESIDENTIAL WELL MONITORING

FIELD STANDARDIZATION OF HORIBA

	STANDARD VALUE	METER READING
ph	4.00 SU	4.00
CONDUCTIVITY	4480 umhos/cm	4480 umhos/cm
SALINITY	0.23%	0.23%

FOLEY
203 GAIL STREET
EHR-0109-300
SAMPLES COLLECTED FROM HOSE SPIGOT ON NORTH SIDE OF HOME AFTER 10 MINUTE PURGE

ph	6.43 SU
CONDUCTIVITY	205 umhos/cm
D.O.	19.37 mg/L
Temp	11.7°C

JENSEN
414 GAIL STREET
EHR-0109-301 ORIGINAL
EHR-0109-302 DUPLICATE
SAMPLES COLLECTED FROM DETACHED GARDEN SPIGOT AFTER 10 MINUTE PURGE. DAVID AND PAUL JENSEN PRESENT

ph	6.99 SU
CONDUCTIVITY	547 umhos/cm
D.O	11.02 mg/L
Temp	11.4°C

NORDSTROM IRRIGATION WELL WINTERIZED, NO SAMPLE

EHR-0109-303 FIELD BLANK

APPENDIX 4

CHAIN OF CUSTODIES

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: ASARCO LLC	Project Name, PWS, Permit, Etc. RI/FS LONG-TERM RESIDENTIAL MONITORING - JANUARY 2009	Sample Origin State:	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address: JON NICKEL P.O. BOX 1230 EAST HELENA, MT 59635	Contact Name: JON NICKEL Phone/Fax: (406) 227-4529	Email:	Sampler: (Please Print) J. NICKEL
Invoice Address:	Invoice Contact & Phone:	Purchase Order:	Quote/Bottle Order:

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ A2LA
☐ GSA ☐ EDD/EDT (Electronic Data)
☐ POTW/WWTP Format: ____
☐ State: ____ ☐ LEVEL IV
☐ Other: ____ ☐ NELAC

Number of Containers; Sample Type: A W S V B O Air Water Soils/Solids Vegetation Bioassay Other

ANALYSIS REQUESTED

RUSH — Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: Hand
Cooler ID(s):
Receipt Temp 6.1 °C
On Ice: Yes (No)
Custody Seal Y (N)
Intact Y (N)
Signature Match Y (N)

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	PHYSICAL PARAMETERS	COMMON IONS	METALS							SEE ATTACHED	Normal Turnaround (TAT)	RUSH	LABORATORY USE ONLY
1 EHP-0109-300 RAW	1/19/09	11:00	GW	X	X								X	X		H9010179-001
2 EHP-0109-300 METAL	↓	11:00	↓			X							↓	↓		
3 EHP-0109-301 RAW	↓	11:30	↓	X	X								↓	↓		002
4 EHP-0109-301 METAL	↓	11:30	↓			X							↓	↓		
5 EHP-0109-302 RAW	↓	11:45	↓	X	X								↓	↓		003
6 EHP-0109-302 METAL	↓	11:45	↓			X							↓	↓		
7 EHP-0109-303 RAW	↓	12:30	↓	X	X								↓	↓		004
8 EHP-0109-303 METAL	↓	12:30	↓			X							↓	↓		
9																
10																

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
JON NICKEL	1/19/09 15:15	[signature]			
Sample Disposal: Return to Client: ____	Lab Disposal: ____		Received by Laboratory: Roxanne Jubbs	1.19.09 15:15	[signature]

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

TABLE B. SAMPLING ANALYTICAL PARAMETERS FOR THE MONTHLY RESIDENTIAL WELL SAMPLE PROGRAM, THE QUARTERLY MONITORING WELL SAMPLE PROGRAM, AND SURFACE WATER SAMPLING - 2008

Parameter	Analytical Technique	Analytical Method	Project Detection Limit (ppm)
Physical Parameters			
PH	PH Meter	SM 4500H-B	
Specific Conductivity	SC Meter	SM 2510 B	
TDS	Gravimetric	SM 2540C	10
TSS	Gravimetric	SM 2540D	10
Common Ions			
Alkalinity	Titrimetric	SM 2320B	1
Bicarbonate	Titrimetric	SM 2320B	1
Sulfate	Turbidimetric	SM 4500SO4 E	1
Chloride	Colorimetric	SM 4500 CL C	1
Calcium	ICP	E200.7	5
Magnesium	ICP	E200.7	5
Sodium	ICP	E200.7	5
Potassium	ICP	E200.7	5
Arsenic and Metals			
Arsenic	ICP ICP-MS	200.7 200.8	0.005 (0.002 for residential samples)
Cadmium	ICP ICP-MS	200.7 200.8	0.001
Copper	ICP ICP-MS	200.7 200.8	0.004
Iron	ICP ICP-MS	200.7 200.8	0.020
Manganese	ICP ICP-MS	200.7 200.8	0.015
Lead	ICP ICP-MS	200.7 200.8	0.005
Selenium	ICP ICP-MS	200.7 200.8	0.005
Zinc	ICP ICP-MS	200.7 200.8	0.020
Field Parameters			
SWL	Electric Tape	HF-SOP-10	0.01 ft
Temperature	PH Meter	HF-SOP-20	NA
Dissolved Oxygen (DO)	DO Meter	HF-SOP-22	NA
PH	pH Meter	HF-SOP-20	NA
Specific Conductivity (SC)	SC Meter	HF-SOP-79	NA

APPENDIX 5

LABORATORY REPORT

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com

ANALYTICAL SUMMARY REPORT

January 28, 2009

Jon Nickel
Asarco LLC
PO Box 1230
East Helena, MT 59635

Workorder No.: H09010129 Quote ID: H330 - Residential Well

Project Name: RI/FS Long Term Residental Monitoring January 2009

Energy Laboratories Inc received the following 4 samples for Asarco LLC on 1/19/2009 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H09010129-001	EHP-0109-300	01/19/09 11:00	01/19/09	Groundwater	Metals by ICP/ICPMS, Dissolved Alkalinity Conductivity Anions by Ion Chromatography pH Solids, Total Dissolved Solids, Total Suspended
H09010129-002	EHP-0109-301	01/19/09 11:30	01/19/09	Groundwater	Same As Above
H09010129-003	EHP-0109-302	01/19/09 11:45	01/19/09	Groundwater	Same As Above
H09010129-004	EHP-0109-303	01/19/09 12:30	01/19/09	Groundwater	Same As Above

BRANCH LABORATORY LOCATIONS
eli-b - Energy Laboratories, Inc. - Billings, MT, EPA # MT00005
eli-c - Energy Laboratories, Inc. - Casper, WY, EPA# WY00002
eli-g - Energy Laboratories, Inc. - Gillette, WY, EPA# WY00006
eli-h - Energy Laboratories, Inc. - Helena, MT, EPA# MT00945
eli-r - Energy Laboratories, Inc. - Rapid City, SD, EPA# SD00012
eli-t - Energy Laboratories, Inc. - College Station, TX, EPA# TX01520

SUBCONTRACTING ANALYSIS
Subcontracting of sample analyses to an outside laboratory may be required. If so, ENERGY LABORATORIES, INC. will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories are indicated within the Laboratory Analytical Report.

SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)
Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

ELI appreciates the opportunity to provide you with this analytical service. For additional information, including certifications, and analytical services visit our web page www.energylab.com.

Jonathan D. Hager
Digitally signed by Jonathan D. Hager
DN: cn=Jonathan D. Hager, o=Energy Laboratory-Helena, ou=Assistant Lab Manager, email=jhager@energylab.com, c=US
Date: 2009.01.28 13:12:01 -07'00'

Report Approved By:

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHP-0109-300
Project: RI/FS Long Term Residental Monitoring January 2009
Matrix: Groundwater

Lab ID: H09010129-001
Collection Date: 01/19/09 11:00
DateReceived: 01/19/09
Report Date: 01/28/09

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.1	s.u.		0.1		A4500-H B	01/20/09 13:43 / hm			PH_090120A	4	090120A-PH-W
Conductivity	300	umhos/cm		1		A2510 B	01/22/09 12:25 / hm			COND_090122A	2	090122A-COND-PROBE W
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	01/20/09 15:03 / hm			SOLIDS_090120A	3	090120A-SLDS-TSS-W
Solids, Total Dissolved TDS @ 180 C	199	mg/L		10		A2540 C	01/19/09 16:12 / hm			SOLIDS_090119A	17	090119A-SLDS-TDS-W
INORGANICS												
Alkalinity, Total as CaCO3	78	mg/L		1		A2320 B	01/22/09 16:16 / hm			TITTR_090122A	4	090122A-ALK-W
Bicarbonate as HCO3	95	mg/L		1		A2320 B	01/22/09 16:16 / hm			TITTR_090122A	4	090122A-ALK-W
Chloride	5	mg/L		1		E300.0	01/22/09 19:34 / hm			IC101-H_090122A	21	R51551
Sulfate	52	mg/L		1		E300.0	01/22/09 19:34 / hm			IC101-H_090122A	21	R51551
METALS, DISSOLVED												
Arsenic	ND	mg/L		0.002		E200.8	01/24/09 12:13 / eli-b			SUB-B123895	15	B_R123895
Cadmium	ND	mg/L		0.001		E200.8	01/24/09 12:13 / eli-b			SUB-B123895	15	B_R123895
Calcium	30	mg/L		1		E200.7	01/21/09 15:24 / eli-b			SUB-B123777	7	B_R123777
Copper	0.018	mg/L		0.004		E200.8	01/24/09 12:13 / eli-b			SUB-B123895	15	B_R123895
Iron	ND	mg/L		0.02		E200.7	01/21/09 15:24 / eli-b			SUB-B123777	7	B_R123777
Lead	ND	mg/L		0.005		E200.8	01/24/09 12:13 / eli-b			SUB-B123895	15	B_R123895
Magnesium	6	mg/L		1		E200.7	01/21/09 15:24 / eli-b			SUB-B123777	7	B_R123777
Manganese	ND	mg/L		0.01		E200.7	01/21/09 15:24 / eli-b			SUB-B123777	7	B_R123777
Potassium	3	mg/L		1		E200.7	01/21/09 15:24 / eli-b			SUB-B123777	7	B_R123777
Selenium	ND	mg/L		0.005		E200.8	01/24/09 12:13 / eli-b			SUB-B123895	15	B_R123895
Sodium	13	mg/L		1		E200.7	01/21/09 15:24 / eli-b			SUB-B123777	7	B_R123777
Zinc	ND	mg/L		0.02		E200.8	01/24/09 12:13 / eli-b			SUB-B123895	15	B_R123895

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHP-0109-301
Project: RI/FS Long Term Residental Monitoring January 2009
Matrix: Groundwater

Lab ID: H09010129-002
Collection Date: 01/19/09 11:30
DateReceived: 01/19/09
Report Date: 01/28/09

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.2	s.u.		0.1		A4500-H B	01/20/09 13:47 / hm			PH_090120A	5	090120A-PH-W
Conductivity	783	umhos/cm		1		A2510 B	01/22/09 12:27 / hm			COND_090122A	4	090122A-COND-PROBE W
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	01/20/09 15:03 / hm			SOLIDS_090120A	4	090120A-SLDS-TSS-W
Solids, Total Dissolved TDS @ 180 C	555	mg/L		10		A2540 C	01/19/09 16:12 / hm			SOLIDS_090119A	18	090119A-SLDS-TDS-W
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		1		A2320 B	01/22/09 16:26 / hm			TITTR_090122A	5	090122A-ALK-W
Bicarbonate as HCO3	150	mg/L		1		A2320 B	01/22/09 16:26 / hm			TITTR_090122A	5	090122A-ALK-W
Chloride	27	mg/L		1		E300.0	01/22/09 19:54 / hm			IC101-H_090122A	22	R51551
Sulfate	230	mg/L		1		E300.0	01/22/09 19:54 / hm			IC101-H_090122A	22	R51551
METALS, DISSOLVED												
Arsenic	0.003	mg/L		0.002		E200.8	01/24/09 13:37 / eli-b			SUB-B123895	16	B_R123895
Cadmium	ND	mg/L		0.001		E200.8	01/24/09 13:37 / eli-b			SUB-B123895	16	B_R123895
Calcium	92	mg/L		1		E200.7	01/21/09 15:35 / eli-b			SUB-B123777	8	B_R123777
Copper	0.004	mg/L		0.004		E200.8	01/24/09 13:37 / eli-b			SUB-B123895	16	B_R123895
Iron	0.05	mg/L		0.02		E200.7	01/21/09 15:35 / eli-b			SUB-B123777	8	B_R123777
Lead	ND	mg/L		0.005		E200.8	01/24/09 13:37 / eli-b			SUB-B123895	16	B_R123895
Magnesium	20	mg/L		1		E200.7	01/21/09 15:35 / eli-b			SUB-B123777	8	B_R123777
Manganese	0.02	mg/L		0.01		E200.7	01/21/09 15:35 / eli-b			SUB-B123777	8	B_R123777
Potassium	6	mg/L		1		E200.7	01/21/09 15:35 / eli-b			SUB-B123777	8	B_R123777
Selenium	0.022	mg/L		0.005		E200.8	01/24/09 13:37 / eli-b			SUB-B123895	16	B_R123895
Sodium	25	mg/L		1		E200.7	01/21/09 15:35 / eli-b			SUB-B123777	8	B_R123777
Zinc	0.05	mg/L		0.02		E200.8	01/24/09 13:37 / eli-b			SUB-B123895	16	B_R123895

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHP-0109-302
Project: RI/FS Long Term Residental Monitoring January 2009
Matrix: Groundwater

Lab ID: H09010129-003
Collection Date: 01/19/09 11:45
DateReceived: 01/19/09
Report Date: 01/28/09

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.2	s.u.		0.1		A4500-H B	01/20/09 13:48 / hm			PH_090120A	7	090120A-PH-W
Conductivity	785	umhos/cm		1		A2510 B	01/22/09 12:28 / hm			COND_090122A	5	090122A-COND-PROBE W
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	01/20/09 15:04 / hm			SOLIDS_090120A	5	090120A-SLDS-TSS-W
Solids, Total Dissolved TDS @ 180 C	523	mg/L		10		A2540 C	01/19/09 16:13 / hm			SOLIDS_090119A	19	090119A-SLDS-TDS-W
INORGANICS												
Alkalinity, Total as CaCO3	120	mg/L		1		A2320 B	01/22/09 16:49 / hm			TITTR_090122A	8	090122A-ALK-W
Bicarbonate as HCO3	150	mg/L		1		A2320 B	01/22/09 16:49 / hm			TITTR_090122A	8	090122A-ALK-W
Chloride	27	mg/L		1		E300.0	01/22/09 20:13 / hm			IC101-H_090122A	23	R51551
Sulfate	230	mg/L		1		E300.0	01/22/09 20:13 / hm			IC101-H_090122A	23	R51551
METALS, DISSOLVED												
Arsenic	0.002	mg/L		0.002		E200.8	01/24/09 14:16 / eli-b			SUB-B123895	17	B_R123895
Cadmium	ND	mg/L		0.001		E200.8	01/24/09 14:16 / eli-b			SUB-B123895	17	B_R123895
Calcium	93	mg/L		1		E200.7	01/21/09 15:43 / eli-b			SUB-B123777	9	B_R123777
Copper	ND	mg/L		0.004		E200.8	01/24/09 14:16 / eli-b			SUB-B123895	17	B_R123895
Iron	0.05	mg/L		0.02		E200.7	01/21/09 15:43 / eli-b			SUB-B123777	9	B_R123777
Lead	ND	mg/L		0.005		E200.8	01/24/09 14:16 / eli-b			SUB-B123895	17	B_R123895
Magnesium	20	mg/L		1		E200.7	01/21/09 15:43 / eli-b			SUB-B123777	9	B_R123777
Manganese	0.02	mg/L		0.01		E200.7	01/21/09 15:43 / eli-b			SUB-B123777	9	B_R123777
Potassium	6	mg/L		1		E200.7	01/21/09 15:43 / eli-b			SUB-B123777	9	B_R123777
Selenium	0.018	mg/L		0.005		E200.8	01/24/09 14:16 / eli-b			SUB-B123895	17	B_R123895
Sodium	25	mg/L		1		E200.7	01/21/09 15:43 / eli-b			SUB-B123777	9	B_R123777
Zinc	0.05	mg/L		0.02		E200.8	01/24/09 14:16 / eli-b			SUB-B123895	17	B_R123895

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHP-0109-303
Project: RI/FS Long Term Residental Monitoring January 2009
Matrix: Groundwater

Lab ID: H09010129-004
Collection Date: 01/19/09 12:30
DateReceived: 01/19/09
Report Date: 01/28/09

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	5.5	s.u.		0.1		A4500-H B	01/20/09 13:51 / hm			PH_090120A	8	090120A-PH-W
Conductivity	2	umhos/cm		1		A2510 B	01/22/09 12:30 / hm			COND_090122A	6	090122A-COND-PROBE W
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	01/20/09 15:05 / hm			SOLIDS_090120A	7	090120A-SLDS-TSS-W
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	01/19/09 16:13 / hm			SOLIDS_090119A	20	090119A-SLDS-TDS-W
INORGANICS												
Alkalinity, Total as CaCO3	2	mg/L		1		A2320 B	01/22/09 16:51 / hm			TITTR_090122A	9	090122A-ALK-W
Bicarbonate as HCO3	2	mg/L		1		A2320 B	01/22/09 16:51 / hm			TITTR_090122A	9	090122A-ALK-W
Chloride	ND	mg/L		1		E300.0	01/22/09 21:11 / hm			IC101-H_090122A	26	R51551
Sulfate	ND	mg/L		1		E300.0	01/22/09 21:11 / hm			IC101-H_090122A	26	R51551
METALS, DISSOLVED												
Arsenic	ND	mg/L		0.002		E200.8	01/24/09 14:23 / eli-b			SUB-B123895	18	B_R123895
Cadmium	ND	mg/L		0.001		E200.8	01/24/09 14:23 / eli-b			SUB-B123895	18	B_R123895
Calcium	ND	mg/L		1		E200.7	01/21/09 15:55 / eli-b			SUB-B123777	10	B_R123777
Copper	ND	mg/L		0.004		E200.8	01/24/09 14:23 / eli-b			SUB-B123895	18	B_R123895
Iron	ND	mg/L		0.02		E200.7	01/21/09 15:55 / eli-b			SUB-B123777	10	B_R123777
Lead	ND	mg/L		0.005		E200.8	01/24/09 14:23 / eli-b			SUB-B123895	18	B_R123895
Magnesium	ND	mg/L		1		E200.7	01/21/09 15:55 / eli-b			SUB-B123777	10	B_R123777
Manganese	ND	mg/L		0.01		E200.7	01/21/09 15:55 / eli-b			SUB-B123777	10	B_R123777
Potassium	ND	mg/L		1		E200.7	01/21/09 15:55 / eli-b			SUB-B123777	10	B_R123777
Selenium	ND	mg/L		0.005		E200.8	01/24/09 14:23 / eli-b			SUB-B123895	18	B_R123895
Sodium	ND	mg/L		1		E200.7	01/21/09 15:55 / eli-b			SUB-B123777	10	B_R123777
Zinc	ND	mg/L		0.02		E200.8	01/24/09 14:23 / eli-b			SUB-B123895	18	B_R123895

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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Client: Asarco LLC
Work Order: H09010129
Project: RI/FS Long Term Residental Monitoring Jan

ANALYTICAL QC SUMMARY REPORT

Date: 28-Jan-09

BatchID: 090119A-SLDS-TDS-W

Run ID :Run Order: **SOLIDS_090119A: 1** SampType: **Method Blank** Sample ID: **MBLK1_090119A** Method: **A2540 C**
Analysis Date: **01/19/09 16:00** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	6	1									

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: **SOLIDS_090119A: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS1_090119A** Method: **A2540 C**
Analysis Date: **01/19/09 16:01** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	1000	10	1000		100	90	110				

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: **SOLIDS_090119A: 14** SampType: **Sample Matrix Spike** Sample ID: **H09010120-001AMS** Method: **A2540 C**
Analysis Date: **01/19/09 16:10** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2460	10	2000	454	100	80	120				

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: **SOLIDS_090119A: 15** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H09010120-001AMSD** Method: **A2540 C**
Analysis Date: **01/19/09 16:11** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2470	10	2000	454	101	80	120	2460	0.4	10	

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Client: Asarco LLC
Work Order: H09010129
Project: RI/FS Long Term Residental Monitoring Jan

ANALYTICAL QC SUMMARY REPORT

Date: 28-Jan-09

BatchID: 090120A-PH-W

Run ID :Run Order: **PH_090120A: 1** SampType: **Laboratory Control Sample** Sample ID: **LCS1_090120A** Method: **A4500-H B**

Analysis Date: **01/20/09 13:36** Units: **s.u.** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.02	0.10	7		100	99	101				

Associated samples: **H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A**

Run ID :Run Order: **PH_090120A: 6** SampType: **Sample Duplicate** Sample ID: **H09010129-002ADUP** Method: **A4500-H B**

Analysis Date: **01/20/09 13:47** Units: **s.u.** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.27	0.10						7.21	0.8	2	

Associated samples: **H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A**

Run ID :Run Order: **PH_090120A: 9** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV1_090120A** Method: **A4500-H B**

Analysis Date: **01/20/09 13:52** Units: **s.u.** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	9.99	0.10	10		100	99	101				

Associated samples:

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Client: Asarco LLC
Work Order: H09010129
Project: RI/FS Long Term Residental Monitoring Jan

ANALYTICAL QC SUMMARY REPORT

Date: 28-Jan-09

BatchID: 090120A-SLDS-TSS-W

Run ID :Run Order: **SOLIDS_090120A: 1** SampType: **Method Blank** Sample ID: **MBLK1_090120A** Method: **A2540 D**

Analysis Date: **01/20/09 15:02** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	1									

Associated samples: **H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A**

Run ID :Run Order: **SOLIDS_090120A: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS1_090120A** Method: **A2540 D**

Analysis Date: **01/20/09 15:02** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	1970	10	2000		98	70	130				

Associated samples: **H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A**

Run ID :Run Order: **SOLIDS_090120A: 6** SampType: **Sample Duplicate** *Sample ID: H09010129-003ADUP* *Method: A2540 D*

Analysis Date: **01/20/09 15:04** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	10						2	0	10	

Associated samples: **H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Client: Asarco LLC
Work Order: H09010129
Project: RI/FS Long Term Residental Monitoring Jan

ANALYTICAL QC SUMMARY REPORT

Date: 28-Jan-09

BatchID: 090122A-ALK-W

Run ID :Run Order **TITTR_090122A: 1** SampType: **Method Blank** Sample ID. **MBLK1_090122A** Method **A2320 B**
Analysis Date: **01/22/09 15:32** Units: **mg/L** Prep Info: Prep Date: Prep Method

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	1									

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: **TITTR_090122A: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS1_090122A** Method: **A2320 B**
Analysis Date: **01/22/09 16:01** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	600	4.0	600		99	90	110				

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: **TITTR_090122A: 6** SampType: **Sample Matrix Spike** Sample ID: **H09010129-002AMS** Method: **A2320 B**
Analysis Date: **01/22/09 16:34** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	690	4.0	600	124.4	95	90	110				

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: **TITTR_090122A: 7** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H09010129-002AMSD** Method: **A2320 B**
Analysis Date: **01/22/09 16:40** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	710	4.0	600	124.4	98	90	110	694.5	2.5	20	

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: **TITTR_090122A: 10** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV1_090122A** Method: **A2320 B**
Analysis Date: **01/22/09 17:00** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	1100	4.0	1000		105	90	110				

Associated samples:

Qualifiers:
ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Work Order: H09010129
Project: RI/FS Long Term Residental Monitoring Jan

ANALYTICAL QC SUMMARY REPORT

Date: 28-Jan-09

BatchID: 090122A-COND-PROBE

Run ID :Run Order: **COND_090122A: 1** SampType: **Laboratory Control Sample** Sample ID: **LCS1_090122A** Method: **A2510 B**
Analysis Date: **01/22/09 12:24** Units: **umhos/cm** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1400	1.0	1412		99	90	110				

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: **COND_090122A: 3** SampType: **Sample Duplicate** Sample ID: **H09010129-001ADUP** Method: **A2510 B**
Analysis Date: **01/22/09 12:26** Units: **umhos/cm** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	300	1.0						300.1	0.1	10	

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: **COND_090122A: 11** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV1_090122A** Method: **A2510 B**
Analysis Date: **01/22/09 12:35** Units: **umhos/cm** Prep Info: Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	719	1.0	718		100	90	110				

Associated samples:

Qualifiers:
ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits
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A - Analyte concentration greater than three times the spike amount

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Project: RI/FS Long Term Residental Monitoring Jan

ANALYTICAL QC SUMMARY REPORT

Date: 28-Jan-09

BatchID: B_R123777

Run ID :Run Order: **SUB-B123777: 2** SampType: **Continuing Calibration Verification Standard** Sample ID: **ICV** Method: **E200.7**
Analysis Date: **01/21/09 14:42** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	23.8	1.0	25		95	95	105				
Iron	2.51	0.030	2.5		100	95	105				
Magnesium	23.8	1.0	25		95	95	105				
Manganese	2.43	0.010	2.5		97	95	105				
Potassium	25.5	1.0	25		102	95	105				
Sodium	25.0	1.0	25		100	95	105				

Associated samples: H09010129-001B; H09010129-002B; H09010129-003B; H09010129-004B

Run ID :Run Order: **SUB-B123777: 3** SampType: **Method Blank** Sample ID: **MB-TJADIS090121A** Method **E200.7**
Analysis Date: **01/21/09 15:09** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.02									
Iron	ND	0.005									
Magnesium	ND	0.1									
Manganese	ND	0.001									
Potassium	ND	0.07									
Sodium	ND	0.04									

Associated samples: H09010129-001B; H09010129-002B; H09010129-003B; H09010129-004B

Run ID :Run Order: **SUB-B123777: 4** SampType: **Laboratory Fortified Blank** Sample ID: **LFB-TJADIS090121A** Method: **E200.7**
Analysis Date: **01/21/09 15:13** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	48.4	1.0	50		97	85	115				
Iron	5.04	0.030	5		101	85	115				
Magnesium	48.9	1.0	50		98	85	115				
Manganese	4.85	0.010	5		97	85	115				
Potassium	50.8	1.0	50		102	85	115				
Sodium	51.0	1.0	50		102	85	115				

Associated samples: H09010129-001B; H09010129-002B; H09010129-003B; H09010129-004B

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Work Order: H09010129
Project: RI/FS Long Term Residental Monitoring Jan

ANALYTICAL QC SUMMARY REPORT

Date: 28-Jan-09

BatchID: B_R123777

Run ID :Run Order: **SUB-B123777: 5** SampType: **Sample Matrix Spike** Sample ID: **B09011266-001BMS2** Method: **E200.7**
Analysis Date: **01/22/09 02:18** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	76	1.0	50	30.6	91	70	130				
Iron	4.6	0.030	5	0.02441	92	70	130				
Magnesium	76	1.0	50	29.4	94	70	130				
Manganese	4.6	0.010	5	0.01035	92	70	130				
Potassium	50	1.0	50	2.765	95	70	130				
Sodium	110	1.0	50	61.8	97	70	130				

Associated samples: H09010129-001B; H09010129-002B; H09010129-003B; H09010129-004B

Run ID :Run Order: **SUB-B123777: 6** SampType: **Sample Matrix Spike Duplicate** Sample ID: **B09011266-001BMSD2** Method: **E200.7**
Analysis Date: **01/22/09 02:22** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	75	1.0	50	30.6	89	70	130	76.03	0.9	20	
Iron	4.5	0.030	5	0.02441	90	70	130	4.61	1.7	20	
Magnesium	76	1.0	50	29.4	93	70	130	76.36	0.7	20	
Manganese	4.5	0.010	5	0.01035	90	70	130	4.6	1.5	20	
Potassium	49	1.0	50	2.765	93	70	130	50.11	1.6	20	
Sodium	110	1.0	50	61.8	94	70	130	110.2	1.1	20	

Associated samples: H09010129-001B; H09010129-002B; H09010129-003B; H09010129-004B

Run ID :Run Order: **SUB-B123777: 11** SampType: **Sample Matrix Spike** Sample ID: **H09010129-001B** Method: **E200.7**
Analysis Date: **01/21/09 15:28** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	121	1.0	100	30.24	91	70	130				
Iron	9.41	0.030	10	0.01599	94	70	130				
Magnesium	98.5	1.0	100	6.326	92	70	130				
Manganese	9.04	0.010	10		90	70	130				
Potassium	96.8	1.0	100	2.518	94	70	130				
Sodium	107	1.0	100	13.18	94	70	130				

Associated samples: H09010129-001B; H09010129-002B; H09010129-003B; H09010129-004B

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
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ANALYTICAL QC SUMMARY REPORT

Date: 28-Jan-09

BatchID: B_R123777

Run ID :Run Order: **SUB-B123777: 12** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H09010129-001B** Method: **E200.7**

Analysis Date **01/21/09 15:32** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	121	1.0	100	30.24	91	70	130	120.8	0.1	20	
Iron	9.23	0.030	10	0.01599	92	70	130	9.412	2	20	
Magnesium	98.9	1.0	100	6.326	93	70	130	98.53	0.4	20	
Manganese	8.84	0.010	10		88	70	130	9.041	2.3	20	
Potassium	97.4	1.0	100	2.518	95	70	130	96.76	0.6	20	
Sodium	108	1.0	100	13.18	95	70	130	107.3	0.7	20	

Associated samples: **H09010129-001B; H09010129-002B; H09010129-003B; H09010129-004B**

Run ID :Run Order: **SUB-B123777: 13** SampType: **Sample Matrix Spike** Sample ID: **B09011375-006BMS2** Method: **E200.7**

Analysis Date: **01/21/09 16:18** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	113	1.0	100	20.07	93	70	130				
Iron	9.60	0.030	10	0.01909	96	70	130				
Magnesium	99.5	1.0	100	5.986	94	70	130				
Manganese	9.30	0.010	10	0.02717	93	70	130				
Potassium	103	1.0	100	8.422	94	70	130				
Sodium	306	1.0	100	211.1	95	70	130				

Associated samples: **H09010129-001B; H09010129-002B; H09010129-003B; H09010129-004B**

Run ID :Run Order: **SUB-B123777: 14** SampType: **Sample Matrix Spike Duplicate** Sample ID: **B09011375-006BMSD2** Method: **E200.7**

Analysis Date: **01/21/09 16:22** Units **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	115	1.0	100	20.07	95	70	130	113.1	2	20	
Iron	9.66	0.030	10	0.01909	96	70	130	9.601	0.6	20	
Magnesium	102	1.0	100	5.986	96	70	130	99.5	2.4	20	
Manganese	9.33	0.010	10	0.02717	93	70	130	9.302	0.3	20	
Potassium	108	1.0	100	8.422	99	70	130	102.7	4.9	20	
Sodium	319	1.0	100	211.1	108	70	130	306.2	4	20	

Associated samples: **H09010129-001B; H09010129-002B; H09010129-003B; H09010129-004B**

Qualifiers:
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ANALYTICAL QC SUMMARY REPORT

Date: 28-Jan-09

BatchID: B_R123895

Run ID :Run Order: **SUB-B123895: 3** SampType: **Initial Calibration Verification Standard** Sample ID: **QCS - 081021A,081125A,080225 B** Method: **E200.8**

Analysis Date: **01/23/09 11:13** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.050	0.0050	0.05		101	90	110				
Cadmium	0.025	0.0010	0.025		100	90	110				
Copper	0.051	0.010	0.05		102	90	110				
Lead	0.050	0.010	0.05		100	90	110				
Selenium	0.051	0.0050	0.05		101	90	110				
Zinc	0.051	0.010	0.05		102	90	110				

Associated samples: **H09010129-001B; H09010129-002B; H09010129-003B; H09010129-004B**

Run ID :Run Order: **SUB-B123895: 4** SampType: **Method Blank** Sample ID: **LRB** Method: **E200.8**

Analysis Date: **01/23/09 13:01** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	4E-05									
Cadmium	ND	9E-06									
Copper	ND	7E-05									
Lead	ND	8E-06									
Selenium	ND	0.0001									
Zinc	0.0007	3E-05									

Associated samples: **H09010129-001B; H09010129-002B; H09010129-003B; H09010129-004B**

Run ID :Run Order: **SUB-B123895: 5** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**

Analysis Date: **01/23/09 13:40** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.052	0.0050	0.05		104	85	115				
Cadmium	0.053	0.0010	0.05		106	85	115				
Copper	0.053	0.010	0.05		107	85	115				
Lead	0.052	0.010	0.05		105	85	115				
Selenium	0.053	0.0050	0.05		106	85	115				
Zinc	*0.053*	*0.010*	*0.05*	*0.00071*	*105*	*85*	*115*				

Associated samples: **H09010129-001B; H09010129-002B; H09010129-003B; H09010129-004B**

Qualifiers: ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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ANALYTICAL QC SUMMARY REPORT

Date: 28-Jan-09

BatchID: B_R123895

Run ID :Run Order: **SUB-B123895: 19** SampType: **Sample Matrix Spike** Sample ID: **B09011306-004BMS** Method: **E200.8**

Analysis Date: **01/24/09 10:33** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0561	0.0050	0.05	0.00046	111	70	130				
Cadmium	0.0487	0.0010	0.05		97	70	130				
Copper	0.0484	0.010	0.05	0.00047	96	70	130				
Lead	0.0525	0.010	0.05	0.00001	105	70	130				
Selenium	0.0553	0.0050	0.05	0.00037	110	70	130				
Zinc	0.0490	0.010	0.05	0.00152	95	70	130				

Associated samples: **H09010129-001B; H09010129-002B; H09010129-003B; H09010129-004B**

Run ID :Run Order: **SUB-B123895: 20** SampType: **Sample Matrix Spike Duplicate** Sample ID: **B09011306-004BMSD** Method: **E200.8**

Analysis Date: **01/24/09 10:40** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0554	0.0050	0.05	0.00046	110	70	130	0.05611	1.3	20	
Cadmium	0.0488	0.0010	0.05		98	70	130	0.04872	0.2	20	
Copper	0.0479	0.010	0.05	0.00047	95	70	130	0.04844	1.2	20	
Lead	0.0522	0.010	0.05	0.00001	104	70	130	0.05246	0.4	20	
Selenium	0.0547	0.0050	0.05	0.00037	109	70	130	0.05532	1.1	20	
Zinc	0.0487	0.010	0.05	0.00152	94	70	130	0.04896	0.6	20	

Associated samples: **H09010129-001B; H09010129-002B; H09010129-003B; H09010129-004B**

Qualifiers:
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ANALYTICAL QC SUMMARY REPORT

Date: 28-Jan-09

BatchID: R51551

Run ID :Run Order: **IC101-H_090122A: 11** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E300.0**
Analysis Date: **01/22/09 16:20** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		95	90	110				
Sulfate	100	1.0	100		100	90	110				

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: **IC101-H_090122A: 12** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV** Method: **E300.0**
Analysis Date: **01/22/09 16:40** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23	1.0	25		94	90	110				
Sulfate	100	1.0	100		100	90	110				

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: **IC101-H_090122A: 13** SampType: **Laboratory Control Sample** Sample ID: **LCS** Method: **E300.0**
Analysis Date: **01/22/09 16:59** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	92	1.0	87.47		105	90	110				
Sulfate	26	1.0	28.53		92	90	110				

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: **IC101-H_090122A: 14** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E300.0**
Analysis Date: **01/22/09 17:18** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	9.1	1.0	10		91	90	110				
Sulfate	37	1.0	40		92	90	110				

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: **IC101-H_090122A: 15** SampType: **Method Blank** Sample ID: **MBLK** Method: **E300.0**
Analysis Date: **01/22/09 17:38** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND										
Sulfate	ND										

Qualifiers: ND - Not Detected at the Reporting Limit
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ANALYTICAL QC SUMMARY REPORT

Date: 28-Jan-09

BatchID: R51551

Run ID :Run Order: IC101-H_090122A: 15 | SampType: Method Blank | Sample ID MBLK | Method: E300.0
Analysis Date: 01/22/09 17:38 | Units: mg/L | Prep Info: Prep Date: | Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: IC101-H_090122A: 24 | SampType: Sample Matrix Spike | Sample ID: H09010129-003A MS | Method: E300.0
Analysis Date: 01/22/09 20:33 | Units: mg/L | Prep Info: Prep Date: | Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	52	1.0	25	26.64	103	90	110				
Sulfate	330	1.0	100	227.4	103	90	110				

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Run ID :Run Order: IC101-H_090122A: 25 | SampType: Sample Matrix Spike Duplicate | Sample ID: H09010129-003A MSD | Method: E300.0
Analysis Date: 01/22/09 20:52 | Units: mg/L | Prep Info: Prep Date: | Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	52	1.0	25	26.64	101	90	110	52.44	1.3	20	
Sulfate	330	1.0	100	227.4	100	90	110	330.2	0.9	20	

Associated samples: H09010129-001A; H09010129-002A; H09010129-003A; H09010129-004A

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

LABORATORIES 877-472-0711 • 406-442-0711 • 406-442-0712 fax • helena@energylab.com

Energy Laboratories Inc
Workorder Receipt Checklist

H09010129

Asarco LLC

Login completed by: Roxanne L. Tubbs

Date and Time Received: 1/19/2009 3:15 PM

Reviewed by: KSW

Received by: rlt

Reviewed Date: 1-21-09

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature:	6.1°C		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

None